BRUHATH BANGALORE MAHANAGARA PALIKE

Name of the Agency	:	**Technical Manager,** KRIDL, Bangalore.
Name of the Work	:	Improvements to Bhuvaneshwarinagara 8th Main road upto Maheshwaramma temple in Ward No.14, Bagalagunte, BBMP, Bangalore.
Estimate Cost	:	Rs.

QUALITY CONTROL REPORTS TO

Asst. Executive Engineer,
T.Dasarahalli Sub Division,
BBMP, Bangalore.

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CTCE/BBMP/W.No.14/KRIDL/WMM/Gradation/2015-16

23.04.2015

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to Bhuvaneshwarinagara 8th Main road upto Maheshwaramma temple in Ward No.14, Bagalagunte, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 02.04.2015

Date of Testing : 23.04.2015

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8240**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	220	220	2.7	97.3	95-100
22.4	2850	3070	37.3	62.7	60-80
11.2	1550	4620	56.1	43.9	40-60
4.75	1050	5670	68.8	31.2	25-40
2.36	985	6655	80.8	19.2	15-30
0.600	725	7380	89.6	10.4	8-22
0.075	580	7960	96.6	3.4	0-8

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Lab No.: CTCE/BBMP/W.No.14/KRIDL/WMM/AL/2015-16

23.04.2015

ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to Bhuvaneshwarinagara 8th Main road upto Maheshwaramma temple in Ward No.14, Bagalagunte, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 02.04.2015

Date of Testing : 23.04.2015

Material : WMM

Sample Location : WMM Mix plant

As per MORTH Table 400-11

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	24.00	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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T-2377

Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-04/824h/QB(SDBC)/2015-16 27.04.2015

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

***CUSTOMER**	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
***AGENCY**	:	**Technical Manager,** KRIDL, Bangalore.
***NAME OF THE WORK**	:	Improvements to Bhuvaneshwarinagara 8th Main road upto Maheshwaramma temple in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	:	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 02.04.2015
***SAMPLE ID**	:	Bitumen
DATE OF SAMPLING	:	25.04.2015
DATE OF TESTING	:	27.04.2015

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The results of the tests conducted on the bitumen sample.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	IS :1203 -1978 (RA-2009)	88	80 to 100
2	Softening point, ^{0}C	IS :1205 -1978 (RA-2009)	46	Min. 40
3	Ductility at 27^{0}C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 75
4	Flash Point, ^{0}C	IS :1209 -1978 (RA-2009)	298	Min. 220

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*Information is furnished by the Customer/Representative.

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Quality Manager

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W.No.14/KRIDL/SDBC/AIV/2015-16 27.04.2015

Aggregate Impact Value

IS: 2386 Part IV

Customer	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, Bangalore.
Name of the Work	Improvements to Bhuvaneshwarinagara 8th Main road upto Maheshwaramma temple in Ward No.14, Bagalagunte, BBMP, Bangalore.
Reference	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 02.04.2015
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	27.04.2015

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	386	387	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	86	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	300	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.28	22.48	22.38

Comments:

→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27%

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Ref. No.: CTCE/BBMP/W.No.14/KRIDL/SDBC/Shape_T/2015-16 : 27.04.2015

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Customer	: **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	: **Technical Manager,** KRIDL, Bangalore.
Name of Work	: Improvements to Bhuvaneshwarinagara 8th Main road upto Maheshwaramma temple in Ward No.14, Bagalagunte, BBMP, Bangalore.
Reference	: BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 02.04.2015
Technical Reference	: IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	: Semi Dense Bituminous Concrete
Date of Testing	: 27.04.2015

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Result : Flakiness Index = **11.25%**

Elongation Index = **13.90%**

Result : Combined Flakiness & Elongation index **25.15%**

Comments:

Maximum allowable Flakiness & Elongation Index for Semi Dense Bituminous Concrete is 30%

Note:

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Venkat

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ಬಾಗಲಗುಂಟೆ, ಬಿಬಿಎಂಪಿ
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Lab No.: CTCE/BBMP/KRIDL/W.No.14/SDBC/TC/2015-16 30.04.2015

DETERMINATION OF RATE OF SPREAD PRIME/TACK COAT

CUSTOMER	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	:	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	:	Improvements to Bhuvaneshwarinagara 8th Main road upto Maheshwaramma temple in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	:	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 02.04.2015
SAMPLE ID	:	8th Main Road, Bhuvaneshwarinagar Ward No.14, BBMP, Bangalore.
DATE OF TESTING	:	30.04.2015

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	mt	0.45 X 0.45	0.45 X 0.45
Area of Plate (a)	Sq.m	0.2025	0.2025
Intial Wt of empty Plate (b)	Kg	1.625	1.626
Final weight of plate after application of prime /Tack Coat (c)	Kg	1.683	1.682
Weight of Prime/Tack Coat (d=c-b)	Kg	0.058	0.056
Rate of spread of prime /tack coat	kg/Sq.m	0.286	0.277
Average	kg/Sq.m	0.281	
Specified Limit	kg/Sq.m	0.250 Kg/sq.m	

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Ref: No: CTCE/BBMP/W.No.14/KRIDL/SDBC/Bit/2015-16 30.04.2015

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX AS per IRC:SP:-1984

CUSTOMER	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Bhuvaneshwarinagara 8th Main road upto Maheshwaramma temple in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 02.04.2015
SAMPLE I/D	8th Main road, Bhuvaneshwarinagara, Ward No.14, BBMP, Bangalore.
DATE OF TESTING	30.04.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	476.5	475.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	23.5	24.50
7. Bitumen content in %	4.70	4.90
8. Average	**4.80**	

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BITUMEN CONTENT GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX
As per IS2386 and IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Bhuvaneshwarinagara 8th Main road upto Maheshwaramma temple in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 02.04.2015
SAMPLE I/D	8th Main road, Bhuvaneshwarinagara, Ward No.14, BBMP, Bangalore.
DATE OF TESTING	30.04.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	25.36	5.32	5.32	94.68	90-100
4.75	259.6	54.48	59.80	40.20	35-51
2.36	55.35	11.62	71.42	28.58	24-39
1.18	35.24	7.40	78.81	21.19	15-30
0.3	39.65	8.32	87.14	12.86	9-19
0.075	33.32	6.99	94.13	5.87	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	34.25	7.20	7.20	92.80	90-100
4.75	259.6	54.60	61.80	38.20	35-51
2.36	33.32	7.01	68.81	31.19	24-39
1.18	35.21	7.40	76.21	23.79	15-30
0.3	39.65	8.34	84.55	15.45	9-19
0.075	46.36	9.75	94.30	5.70	3-8

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